ARTILLERY STATISTICS FROM THE WORLD WAR

BY LIEUTENANT-GENERAL RHONE IN "ARTILLERISTISCHE MONATSHEPTE", JANUARY-FEBRUARY, 1924

TRANSLATED BY COLONEL OLIVER L. SPAULDING, JR., FIELD ARTILLERY

IT IS not to be denied that numbers have great, even if not decisive, influence in war; and knowledge of numbers is necessary to form opinions. The following are a few of the figures that an artilleryman ought to know. Those affecting the French artillery are mostly taken from General Herr's book "L'Artillerie." In so far as possible, the corresponding German figures are given. In comparing them, it should be remembered that the French artillery fought for the most part in the western theatre only, and that it was reënforced by the English, numerically weak at the outset, but rapidly increasing. The German artillery, on the other hand, sent no small part of its force to Russia and Poland. No figures are given as to the Americans, who came in only at the end of the war, nor as to the Belgians and Portuguese.

At the beginning of the war France had, besides the old type guns assigned to defense of the fortresses, the following:

3840	75-mm. guns
120	65-mm. mountain guns
308	heavy field guns
380	heavy siege guns
4648	

Germany had at the same time:

5068	field guns[1]
1260	light field howitzers[1]
1024	heavy guns[2]
18	anti-aircraft guns
7370	

Wastage in guns was very heavy, especially on the French side—not only through losses in battle and on the retreat, but also from their own firing, as results of bursts in the bore or simple wear. The wear was greatly increased through the use of heavy charges to get increased range. In the French Sixth Army, between July 1

[1]Wrisberg, "Wehr und Waffen." This number includes those used for training replacements.

[2]Schwarte, "Der Grosse Krieg."

and October 24, 1916, 746 guns were burst or worn out—4.5 per day (so in original—Transl.). One battalion of 155-mm. howitzers had only two out of twelve pieces serviceable on September 10, 1914. According to the *Revue d'Artillerie,* in the 400 days from September 1, 1917, to October 1, 1918, 926 75-mm. guns were destroyed by bursts in the bore; 853 were swelled; 511 were destroyed by hostile fire; 3758 were worn out. No similar German statistics are available; but according to Wrisberg 920 field guns and 280 light field howitzers had to be replaced during the first ten months of the war. Evidently bursts in the bore were much less common in the German artillery than in the French.

Both sides felt a serious shortage of ammunition after the battle of the Marne, because of the great number of engagements and the rapidity of the fire. The French had a much greater initial supply than the Germans. They had on hand 1300 rounds for each 75-mm. gun; after the battle of the Marne there remained 500 rounds, the average expenditure having been 800. The German original supply was 987 per field gun, 973 per light field howitzer, and 4000 per heavy field howitzer—the pieces capable of the most rapid fire had the smallest stock.

France worked with great energy on production of ammunition. During the first weeks of the war 14,000 rounds per day were produced for the 75-mm. gun. On September 15, 1914, the commander-in-chief called for a daily quota of 40,000 rounds, and this was finally increased by order of the minister of war to 100,000 (Herr, p. 63). Results were much smaller in Germany. According to Wrisberg (p. 81), the deliveries demanded during 1914 averaged 200,000 rounds per month for the field gun, or 7000 per day; for the heavier guns, correspondingly less. From October on, the deliveries demanded were 15,000 per day for the field gun; from December 21st, 42,000 rounds per day.

Expenditure, especially on the French side, far exceeded even the high estimates based upon the East Asiatic War. In the six days' battle of Champagne, September 22–27, 1915, the expenditure was as follows:

1,387,370 rounds for 1100 75-mm. guns, or over 200 rounds per gun per day.

295,800 rounds for 872 heavy guns, or over 50 per gun per day.

On July 1, 1916, the day of the main attack on the Somme, the expenditure was:

75-mm., 270,000 rounds, weighing 2700 tons.

Heavy guns, 80,000 rounds, weighing 4000 tons.

Trench mortars, 30,000 rounds, weighing 1200 tons.

To transport this ammunition supply for a single day required

27 trains of 30 cars each. It was in this battle that the great wastage of guns, detailed above, occurred.

At Verdun, July 13–27, 1916, about 3,000,000 rounds of 75-mm. ammunition were fired, and 1,000,000 rounds of heavy shell, weighing in all 120,000 tons, or 6000 kilograms of steel for each running metre of front. For the great attack in the spring of 1917, which the French hoped would decide the war, there were provided 24,000,000 rounds of 75-mm. ammunition, or 12,000 per gun—almost ten times the total stock at the beginning of the war—and 9,000,000 for the heavier calibres, or 4500 per gun (Herr, p. 77). How much of this was fired does not appear.

For the German expenditure, I find statistics only for Verdun. According to Wrisberg (pp. 83, 99), in the 90 days from March 21 to June 20, 1916, the expenditure was:

9,000,000 rounds for light field artillery,
6,400,000 rounds for heavy field howitzers,
700,000 rounds for 21-cm. mortars,
735,000 rounds for 10-cm. guns,
58,000 rounds for 13-cm. guns,
64,000 rounds for other calibres.

Total, 16,957,000 rounds, or about 190,000 per day.

This immense expenditure indicates not only rapid fire, but great number of guns. This number increased steadily during the war. The French figures are as follows:

Champagne, 1915; 1100 75-mm. guns, or 1 per 32 m. front.
872 heavy guns, or 1 per 40 m. front.
Artois, 1915; 500 75-mm. guns, or 1 per 30 m. front.
400 heavy guns, or 1 per 36 m. front.
Somme, 1916; 444 75-mm. guns, or 1 per 34 m. front.
645 heavy guns, or 1 per 23 m. front.
360 tr. mortars, or 1 per 42 m. front.
Aisne, 1917; 2000 75-mm. guns, or 1 per 20 m. front.
1947 heavy guns, or 1 per 21 m. front.
1650 tr. mortars, or 1 per 25 m. front.
Verdun, Aug. 20–26, 1917:
948 75-mm. guns, or 1 per 18 m. front.
1384 heavy guns, or 1 per 12 m. front.
247 tr. mortars, or 1 per 69 m. front.

In all, during the counter-attack from Verdun, there was one gun to each 6.5-metres front. Even stronger in proportion was the artillery at Malmaison in October 23, 1917, where 624 75-mm. guns, 986 heavy guns and 270 trench mortars were employed against a

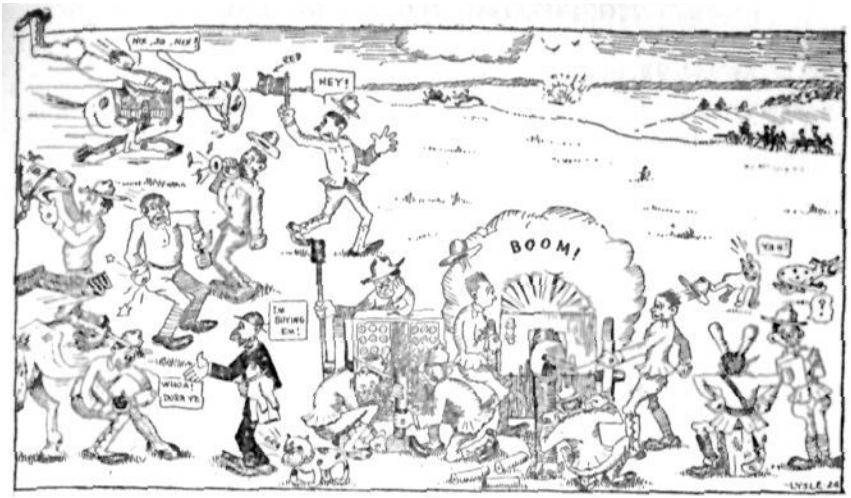
front of 10 kilometres—one gun or trench mortar for each 5.3 metres front. General Herr calculates that if the carriages—guns, limbers and caissons—had been placed hub to hub they would have covered the entire 10 kilometres front without interval.

On the German side, we have accurate information only for Verdun, February 21, 1916 (*Artilleristische Monatshefte* for May, 1922). On the right bank of the Meuse, on a front of 38 kilometres, there were 338 field guns, or 1 per 113 metres front, and 543 heavy guns, or 1 per 65 metres front. On the left bank, on a front of 21 kilometres, there were 182 field guns, or 1 per 115 metres, and 321 heavy guns, or 1 per 65 metres.[3] Thus the French attacks were always prepared by a greater number of guns.

The great ammunition expenditure of the French is explained also by the greater length of their preparations. The Germans counted more upon surprise, and hence made the preparations short. Thus at Riga, September, 1917, their preparation continued 5 hours; on March 21, 1918, 5 hours; May 27, 1918, 2 hours, 40 minutes; June 9, 1918, 3 hours, 45 minutes; July 15, 1918, 4 hours. In the Champagne, 1915, the French preparation was 3 days; Somme, 1916, 7 days; Verdun, October, 1916, 3 days; Verdun, August, 1917, 7 days; Aisne, 1917, 5 days; Flanders, 1917, 16 days; Malmaison, 1917, 6 days.

Unquestionably, in spite of its short duration, the German preparation was the more effective, for none of these attacks could compare for success with those of the spring of 1918. It seems strange, therefore, when General Herr (p. 92) accounts for the difference by saying that the French artillery "disliked the rough, inelegant and wasteful German firing methods, inconsistent with the French preference for moderation and accuracy; besides, these methods could not have been used, on account of the limited capacity of the iron works." I do not know whether this can be taken as an accurate statement of the firing methods on the two sides. If it is, I can only say that in war, effect is more useful than elegance. I have always supposed heretofore that the French contented themselves with a rougher adjustment than the Germans—witness the *tir progressif*. But if the extreme effort of the French for close shooting was really the cause of their poor effect, that can only mean either that they mistook their targets, or else that their adjustment was false. In either case, it warns us not to be too confident of the accuracy of our adjustments.

[3]It will be noted, however, that this was an enveloping attack, where the front of the batteries was very much greater than the front of the targets.—TRANSLATOR.



A Comic History of Yale

BY FAIRFAX DOWNEY, '16. ILLUSTRATED BY J. C. LYSLE, '16 S.

ELEVENTH CANTO

YALE BLUE GOES WELL WITH ARTILLERY RED

I.

Since the days when the Maine
Was remembered by Spain,
Our campus had not been a warlike terrain.
But came a tall soldier yclept Major Danford,
Who blew on a bugle and ordered each man f'ward.
"To arms! that is, cannon, to quell this disorder
That's being kicked up on the Mexican border."
With issue of ordnance and odd size O.D's,
There sprang into being the Yale Batteries.
Though set like our forebears to chase Santa Anna,
We fought all our battles at Camp Tobyhanna.

II.

"T was there that we took a post-graduate course
In acting as male chambermaids to a horse.
We groomed noble steeds with the glanders or pip—
Such boneracks we'd hang campaign hats on a hip,
And dust between ribs with a long-handled brush,
And fly from their hoofs in a desperate rush.
A lean Rosinante
The U. S. would ante,
Was on its last legs, its remaining days scanty.
Those nightmares would die of a swollen esophagus,
And details would dig them a deep stone sarcophagus.

III.

We learned in the army, you're sworn in, then sworn at,
And once in the thing, you can't get out, and that's that.
We noted that officers are given to spleen
And apt to take on like an embryo Dean.
We found that with cannon, it's well to stand clear,
Since they shoot in the front and kick back in the rear.
Each vowing to kill a
Companion of Villa,
We drank his confusion in sarsaparilla.
Then like the French king with his forty thou' men,
Having marched up the hill, why we marched down again.

IV.

But in '17,
Again on the Green,
Squads east and squads west are the usual scene.
And former Yale gunners, now gladder and wiser
They'd minored in Villa, all major in Kaiser.
School quits. Poor students who'd never deserve a
Diploma get one through old Mars, not Minerva.
Those who through chapel were want to sleep heavily,
Snap out of bed at the first notes of reveille.
Wandering round all the Latin profs go,
Murmuring, *"Arma virumque cano."*

V.

And so when the caissons went rolling along.
There's many a Yale man that knows well the song.
Full oft a barrage
On the foe's camouflage
Was fired by an Eli, *qui n'a pas grand age*.
And many at sea,
Or in infantry,
Fought on with their buddies in artillery.
Thus called by a country in need of her sons,
There came—and will ever come—Yale and the Guns.

—From *The Yale Alumni Weekly*.